

FILE 'HCAPLUS' ENTERED AT 10:39:36 ON 25 APR 2008
L1 79545 S (INTERVERTEBRAL DISC) OR (NUCLEUS PULPOSUS) OR SPINE OR SPINA
L2 299159 S CROSSLINK? OR GENEPIN OR PROANTHOCYANIDIN
L3 424 S L1 AND L2
L4 253 S L3 AND (PY<2004 OR AY<2004 OR PRY<2004)

FILE 'HCAPLUS' ENTERED AT 10:40:37 ON 25 APR 2008
L5 1290 S (INTERVERTEBRAL DISC) OR (NUCLEUS PULPOSUS)
L6 18 S L4 AND L5

=> file hcaplus
COST IN U.S. DOLLARS

FULL ESTIMATED COST

SINCE FILE TOTAL
ENTRY SESSION
0.42 0.42

FILE 'HCAPLUS' ENTERED AT 10:39:36 ON 25 APR 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2008 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 25 Apr 2008 VOL 148 ISS 18
FILE LAST UPDATED: 24 Apr 2008 (20080424/ED)

New CAS Information Use Policies. enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s (intervertebral disc) or (nucleus pulposus) or spine or spinal or scoliosis

2663 INTERVERTEBRAL
22118 DISC
890 INTERVERTEBRAL DISC
 (INTERVERTEBRAL(W)DISC)
274180 NUCLEUS
540 PULPOSUS
532 NUCLEUS PULPOSUS
 (NUCLEUS(W)PULPOSUS)
8908 SPINE
72542 SPINAL
484 SCOLIOSIS
79545 (INTERVERTEBRAL DISC) OR (NUCLEUS PULPOSUS) OR SPINE OR SPINAL
OR SCOLIOSIS

⇒ s crosslink? or genepin or proanthocyanidin

297184 CROSSLINK?
4 GENEPIN
1986 PROANTHOCYANIDIN
L2 299159 CROSSLINK? OR GENEPIN OR PROANTHOCYANIDIN

$\Rightarrow n = 11$ and 12

J.3 424 J.1 AND J.2

=> s. 13 and (PY<2004 or AY<2004 or PBY<2004)

23980400 PY<2004
4767599 AY<2004

4246343 PRY<2004
L4 253 L3 AND (PY<2004 OR AY<2004 OR PRY<2004)

=> file stnguide

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	2.69	3.11

FILE 'STNGUIDE' ENTERED AT 10:39:41 ON 25 APR 2008
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT
COPYRIGHT (C) 2008 AMERICAN CHEMICAL SOCIETY (ACS)

FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Apr 18, 2008 (20080418/UP).

=> d 14 1-10 ti
YOU HAVE REQUESTED DATA FROM FILE 'HCAPLUS' - CONTINUE? (Y)/N:y

- L4 ANSWER 1 OF 253 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Pharmaceutical compositions containing non-toxic crosslinking reagents to resist progressive spinal degeneration and deformity
- L4 ANSWER 2 OF 253 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Chimeric C3 exoenzyme-like Rho antagonists for treating injured nervous system and cancer
- L4 ANSWER 3 OF 253 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Methods and compositions and tissue culture system for development of drug screening procedures and diagnostic tools
- L4 ANSWER 4 OF 253 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Direct application of non-toxic crosslinking reagents to restabilize surgically destabilized intervertebral joints
- L4 ANSWER 5 OF 253 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Direct application of non-toxic crosslinking reagents to resist progressive spinal degeneration and deformity
- L4 ANSWER 6 OF 253 HCAPLUS COPYRIGHT 2008 ACS on STN
TI U-shaped disc-shunt and delivery device
- L4 ANSWER 7 OF 253 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Natural collagens crosslinked with non-toxic crosslinking agents to resist progressive spinal deformity
- L4 ANSWER 8 OF 253 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Composition for cartilage formation or regeneration comprising a NELL gene product
- L4 ANSWER 9 OF 253 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Compositions and methods using SAP, interleukin 12, laminin 1, crosslinked IgG or IgG aggregates for suppressing fibrocytes and for detecting fibrocyte differentiation, and therapeutic use
- L4 ANSWER 10 OF 253 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Conjugates of galactose-binding lectins and clostridial neurotoxins as

analgesics

```
=> file hcplus
COST IN U.S. DOLLARS          SINCE FILE      TOTAL
                                ENTRY        SESSION
FULL ESTIMATED COST          0.06          9.52
```

FILE 'HCPLUS' ENTERED AT 10:40:37 ON 25 APR 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2008 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 25 Apr 2008 VOL 148 ISS 18
FILE LAST UPDATED: 24 Apr 2008 (20080424/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s (intervertebral disc) or (nucleus pulposus)

```
2663 INTERVERTEBRAL
22118 DISC
    890 INTERVERTEBRAL DISC
        (INTERVERTEBRAL(W)DISC)
274180 NUCLEUS
    540 PULPOSUS
    532 NUCLEUS PULPOSUS
        (NUCLEUS (W)PULPOSUS)
L5      1290 (INTERVERTEBRAL DISC) OR (NUCLEUS PULPOSUS)
```

=> s 14 and 15

L6 18 L4 AND L5

=> file stnguide

```
COST IN U.S. DOLLARS          SINCE FILE      TOTAL
                                ENTRY        SESSION
FULL ESTIMATED COST          2.69          12.21
```

FILE 'STNGUIDE' ENTERED AT 10:40:39 ON 25 APR 2008
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT
COPYRIGHT (C) 2008 AMERICAN CHEMICAL SOCIETY (ACS)

FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Apr 18, 2008 (20080418/UP).

=> d 16 1-18 ti abs ibib
YOU HAVE REQUESTED DATA FROM FILE 'HCAPLUS' - CONTINUE? (Y)/N:y

- L6 ANSWER 1 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Method for nonsurgical treatment of the nucleus pulposus
of the intervertebral disc by genipin or
proanthocyanidin
AB This invention relates to a method and compns. for treating pathol.
intervertebral disks comprising the step of delivering an agent selected
from the group consisting of genipin and proanthocyanidin that
causes chemical crosslinking of the native mol. components of the
nucleus pulposus of the disk. Supplemental materials
which are susceptible to crosslinking by the aforementioned
agent are optionally delivered to the disk in order to increase and
maintain disk height. Atelopeptide Type I collagen solution is injected
percutaneously into the center of the intervertebral disk. The patient
then follows a prescribed light exercise regimen of limited right and left
lateral bending, flexion and extension, and torsional twisting and told to
refrain from lifting heavy objects and engaging in high impact exercises.
- ACCESSION NUMBER: 2005:1028143 HCAPLUS <<LOGINID:20080425>>
DOCUMENT NUMBER: 143:312042
TITLE: Method for nonsurgical treatment of the
nucleus pulposus of the
intervertebral disc by genipin or
proanthocyanidin
INVENTOR(S): Slivka, Michael Andrew; Serhan, Hassan
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 9 pp., Cont.-in-part of U.S.
Ser. No. 938,197.
CODEN: USXKC0
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:
- | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|-----------------|
| US 20050209699 | A1 | 20050922 | US 2005-92265 | 20050329 <-- |
| US 20030181365 | A1 | 20030925 | US 2002-102075 | 20020319 <-- |
| US 6812211 | B2 | 20041102 | | |
| US 7294617 | B2 | 20071113 | US 2004-938197 | 20040909 <-- |
| PRIORITY APPLN. INFO.: | | | US 2002-102075 | A3 20020319 <-- |
| | | | US 2004-938197 | A2 20040909 |
- L6 ANSWER 2 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Hydrogel compositions comprising nucleus pulposus for
tissue repair
AB Disclosed are methods and compns. useful in the treatment, augmentation
and/or repair of soft and/or hard tissues of animals, and in particular,
vertebrates such as humans. The invention provides hydrogel compns. for
use in the preparation of medicaments for wound healing, cartilage and meniscus
repair, dermal augmentation, and bone fusion, as well as methods for the
treatment of intervertebral disk impairment. In particular embodiments,
the invention provides compns. useful in restoring hydrodynamic function,
increasing intervertebral disk height, and improving proliferation and
survival of chondrocytes and other cells in intervertebral disks that have
been compromised by injury, degenerative disease, congenital
abnormalities, and/or the aging process. For example, a three-dimensional

fluid matrix of crosslinked nucleus pulposus tissue obtained from donor vertebrates was prepared using, e.g., a photoactive dye methylene blue or methylene green and lyophilized. The lyophilized and pulverized matrix material was sterilized with 70% ethanol, the matrix was centrifuged, and the pellet was suspended in heat-inactivated sheep serum at a ratio of 0.5 g lyophilized matrix to 1 mL serum to prepare a viscous fluid matrix which can be loaded into a syringe and delivered to repair or treat intervertebral disk degeneration via a small gauge needle.

ACCESSION NUMBER: 2004:681599 HCPLUS <<LOGINID::20080425>>

DOCUMENT NUMBER: 141:212820

TITLE: Hydrogel compositions comprising nucleus pulposus for tissue repair

INVENTOR(S): Moehlenbruck, Jeff; Chandrashekhar, Pathak

PATENT ASSIGNEE(S): Centerpulse Biologics Inc., USA

SOURCE: PCT Int. Appl., 81 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004069296	A1	20040819	WO 2004-US3034	20040202 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2004208821	A1	20040819	AU 2004-208821	20040202 <--
CA 2513055	A1	20040819	CA 2004-2513055	20040202 <--
EP 1594558	A1	20051116	EP 2004-707463	20040202 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2006518256	T	20060810	JP 2006-503281	20040202 <--
US 20070003525	A1	20070104	US 2005-543931	20050728 <--
PRIORITY APPLN. INFO.:			US 2003-443978P	P 20030131 <--
			WO 2004-US3034	W 20040202

L6 ANSWER 3 OF 18 HCPLUS COPYRIGHT 2008 ACS on STN

TI Methods for controlling gel properties, articles, and forming physically crosslinked vinyl polymer gels

AB The title method includes dissolving a vinyl polymer in a first solvent to form a solution, and contacting the vinyl polymer solution in a suitable volume of

≥1 immersion solvent comprising a second solvent to cause gelation.

Poly(vinyl alc.) compns. that produce phys. crosslinked hydrogels have tunable phys. properties. Articles such as prosthetic intervertebral disks and contact lenses are made from these hydrogels.

ACCESSION NUMBER: 2004:392346 HCPLUS <<LOGINID::20080425>>

DOCUMENT NUMBER: 140:391893

TITLE: Methods for controlling gel properties, articles, and forming physically crosslinked vinyl polymer gels

INVENTOR(S): Ruberti, Jeffrey W.; Braithwaite, Gavin J. c.

PATENT ASSIGNEE(S): Cambridge Polymer Group, Inc., USA

SOURCE: U.S. Pat. Appl. Publ., 26 pp.

DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20040092653	A1	20040513	US 2003-631491	20030731 <--
US 20040171740	A1	20040902	US 2004-771852	20040204 <--
AU 2004265544	A1	20050224	AU 2004-265544	20040204 <--
CA 2533835	A1	20050224	CA 2004-2533835	20040204 <--
WO 2005017000	A1	20050224	WO 2004-US3135	20040204 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MD, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1648955	A1	20060426	EP 2004-749315	20040204 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK				
JP 2007500764	T	20070118	JP 2006-521806	20040204 <--
US 20060270781	A1	20061130	US 2006-462799	20060807 <--
US 20070054990	A1	20070308	US 2006-462813	20060807 <--
US 20070167541	A1	20070719	US 2006-566263	20060928 <--
PRIORITY APPLN. INFO.:			US 2002-400899P	P 20020802 <--
			US 2003-631491	A2 20030731 <--
			US 2004-771852	A3 20040204
			WO 2004-US3135	W 20040204

L6 ANSWER 4 OF 18 HCPLUS COPYRIGHT 2008 ACS on STN

TI Novel associated hydrogels for nucleus pulposus replacement

AB Hydrogels of poly(vinyl alc.) (PVA) and poly(vinyl pyrrolidone) (PVP) blends may provide a material suitable for replacement of the nucleus pulposus of the intervertebral disk. This research examined the stability of these hydrogels under simulated physiol. conditions. Polymer dissoln. and stability were characterized over 120 days immersion, chemical surface anal. over 56 days immersion, and tensile mech. behavior over 56 days immersion. Rubber elasticity theory was used by combining mech. results with swelling data to calculate network characteristics such as the mol. weight between phys. crosslinks and d. of crosslinks. Properties were examined as a function of PVA/PVP composition as well as PVA mol. weight and PVP mol. weight. Results indicated

that PVA/PVP blends prepared with moderate amts. of PVP (0.5-5%) resulted in a polymer network stabilized through interchain hydrogen bonding between hydroxyl groups on PVA chains and carbonyl groups on PVP chains. Most notably, a significant decrease in percentage of polymer mass loss was seen for blends prepared with 143K mol. weight PVA. Surface chemical anal. revealed that PVP unincorporated in the network structure suffered significant dissoln. out of the polymer network and into solution. The mol. weight of PVA and PVP were shown to have a significant influence on the blends' network properties. Gels prepared with lower mol. weight PVA resulted in a more stable blend containing a higher d. of crosslinks. However, blends prepared with a higher mol. weight PVA showed superior polymer

network stability in dissoln. studies. The blend that had the best combination of network stability under physiol. conditions and a relatively tight, stable, and crosslinked network was prepared with 99% PVA (143K) and 1% PVP (40K). This material is proposed as an implant material for replacement of the degenerated nucleus pulposus.

ACCESSION NUMBER: 2003:975633 HCPLUS <>LOGINID::20080425>>
DOCUMENT NUMBER: 140:380509
TITLE: Novel associated hydrogels for nucleus pulposus replacement
AUTHOR(S): Thomas, Jonathan; Lowman, Anthony; Marcolongo, Michele
CORPORATE SOURCE: Department of Materials Science and Engineering,
Drexel University, Philadelphia, PA, 19104, USA
SOURCE: Journal of Biomedical Materials Research, Part A (2003), 67A(4), 1329-1337
CODEN: JBMRCR
PUBLISHER: John Wiley & Sons, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 5 OF 18 HCPLUS COPYRIGHT 2008 ACS on STN
TI Intervertebral Disc Collagen. Usage of the Short Form of the $\alpha 1(IX)$ Chain in Bovine Nucleus pulposus
AB Nucleus pulposus, the central zone of the intervertebral disk, is gel-like and has a similar collagen phenotype to that of hyaline cartilage. Amino-terminal protein sequence anal. of the $\alpha 1(IX)$ COL3 domain purified from bovine nucleus pulposus gave a different sequence to that of the long $\alpha 1(IX)$ transcript expressed in hyaline cartilage and matched the predicted sequence of short $\alpha 1(IX)$. The findings indicate that the matrix of bovine nucleus pulposus contains only the short form of $\alpha 1(IX)$ that lacks the NC4 domain. The sequence encoded by exon 7, predicted from human COL9A1, is absent from both short and long forms of $\alpha 1(IX)$ from bovine nucleus pulposus and articular cartilage. A structural anal. of the crosslinking sites occupied in type IX collagen from nucleus pulposus showed that usage of the short $\alpha 1(IX)$ transcript in disk tissue had no apparent effect on crosslinking behavior. As in cartilage, type IX collagen of nucleus pulposus was heavily cross-linked to type II collagen and to other mols. of type IX collagen with a similar site occupancy.

ACCESSION NUMBER: 2003:500576 HCPLUS <>LOGINID::20080425>>
DOCUMENT NUMBER: 139:177097
TITLE: Intervertebral Disc Collagen. Usage of the Short Form of the $\alpha 1(IX)$ Chain in Bovine Nucleus pulposus
AUTHOR(S): Wu, Jiann-Jiu; Eyre, David R.
CORPORATE SOURCE: Orthopedic Research Laboratories, University of Washington, Seattle, WA, 98195, USA
SOURCE: Journal of Biological Chemistry (2003), 278(27), 24521-24525
CODEN: JBCHA3; ISSN: 0021-9258
PUBLISHER: American Society for Biochemistry and Molecular Biology
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 6 OF 18 HCPLUS COPYRIGHT 2008 ACS on STN
 TI Methods, devices, and collagen-containing preparations for intervertebral disc treatment
 AB A therapeutic method for treating mammalian intervertebral disks comprises injecting under pressure a preparation of crosslinked collagen into the intra-discal space. The intervertebral distance in injected disks is immediately increased by the treatment. At least some mech. properties of the treated vertebral column are preserved or partially restored. The method may be used to relieve back pain in patients, to increase patient height and to stabilize the spinal column. The therapeutic method may result in at least a partial regeneration of the nucleus pulposus, and/or development of cartilaginous or fibrocartilaginous tissues or dense fibrous tissues.
 ACCESSION NUMBER: 2003:472329 HCPLUS <>LOGINID::20080425>>
 DOCUMENT NUMBER: 139:26712
 TITLE: Methods, devices, and collagen-containing preparations for intervertebral disc treatment
 INVENTOR(S): Pitaru, Shahar; Noff, Matitieu
 PATENT ASSIGNEE(S): Colbar R & D Ltd., Israel
 SOURCE: PCT Int. Appl., 84 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003049669	A2	20030619	WO 2002-IL997	20021210 <--
W:	AB, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GO, GW, ML, MR, NE, SN, TD, TG			
AU 2002358957	A1	20030623	AU 2002-358957	20021210 <--
JP 2005511207	T	20050428	JP 2003-550720	20021210 <--
MX 2004PA05707	A	20050620	MX 2004-PA5707	20040610 <--
PRIORITY APPLN. INFO.:			US 2001-337145P	P 20011210 <--
			WO 2002-IL997	W 20021210 <--

L6 ANSWER 7 OF 18 HCPLUS COPYRIGHT 2008 ACS on STN
 TI Use of non-toxic crosslinking reagents to improve fatigue resistance and reduce mechanical degradation of intervertebral disc and other collagenous tissues
 AB A method of improving the resistance of collagenous tissue to mech. degradation in accordance with the present invention comprises the step of contacting at least a portion of a collagenous tissue with an effective amount of a crosslinking reagent. The crosslinking reagent includes a crosslinking agent such as genipin and/or proanthocyanidin. Further, the crosslinking reagent may include a crosslinking agent in a carrier medium. The collagenous tissue to be contacted with the crosslinking reagent is preferably a portion of an intervertebral disk or articular cartilage. The contact between the tissue and the crosslinking reagent is effected by injections directly into the select tissue using a needle.

Alternatively, contact between the tissue and the crosslinking reagent is effected by placement of a time-release delivery system such as a gel or ointment, or a treated membrane or patch directly into or onto the target tissue. Contact may also be effected by, for instance, soaking.

ACCESSION NUMBER: 2003:202381 HCPLUS <<LOGINID::20080425>>
 DOCUMENT NUMBER: 138:226799
 TITLE: Use of non-toxic crosslinking reagents to improve fatigue resistance and reduce mechanical degradation of intervertebral disc and other collagenous tissues
 INVENTOR(S): Hedman, Thomas P.
 PATENT ASSIGNEE(S): University of Southern California, USA
 SOURCE: PCT Int. Appl., 25 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 6
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003020031	A1	20030313	WO 2002-US27677	20020829 <<
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2458821	A1	20030313	CA 2002-2458821	20020829 <<
AU 2002335683	A1	20030318	AU 2002-335683	20020829 <<
EP 1432312	A1	20040630	EP 2002-770446	20020829 <<
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
JP 2005501874	T	20050120	JP 2003-524354	20020829 <<
CN 1578624	A	20050209	CN 2002-821684	20020829 <<
PRIORITY APPLN. INFO.:			US 2001-316287P	P 20010831 <<
			WO 2002-US27677	W 20020829 <<
REFERENCE COUNT:	2	THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT		

L6 ANSWER 8 OF 18 HCPLUS COPYRIGHT 2008 ACS on STN

TI Elastic tissues of the intervertebral disc

AB A review. Elastic fibers have been generally considered to play no significant role in the mech. functioning of the intervertebral disk since earlier studies reported that the elastic fiber network was sparse and irregular. However, a recent study has reported that the network is highly organized and that the distribution and orientation of elastic fibers varies from region to region. In the annulus, elastic fibers appear densely distributed in the region between the lamellae and also in bridges' across the lamellae. They are also organized in the nucleus where long straight fibers are radially oriented and anchor perpendicularly or obliquely into the cartilaginous endplate.

Immunohistochem. using specific antibodies indicates that elastin is present in the network, as is fibrillin. Biochem. studies show, however, that the amino acid composition of the residue remaining after alkaline (NaOH) extraction or CNBr digestion contains a higher concentration of polar amino acids than

ligamentum nuchal elastin. The composition of the residue suggests that disk elastin may crosslink strongly with some other matrix components. With such coupling, it is thought that elastic fibers could play a significant mech. role even though overall elastin is <5% of the total dry weight of the disk.

ACCESSION NUMBER: 2002:899096 HCPLUS <>LOGINID::20080425>>
DOCUMENT NUMBER: 138:365884
TITLE: Elastic tissues of the intervertebral disc
AUTHOR(S): Yu, J.
CORPORATE SOURCE: Laboratory of Physiology, University of Oxford, Oxford, OX1 3PT, UK
SOURCE: Biochemical Society Transactions (2002), 30(6), 848-852
CODEN: BCSTB5; ISSN: 0300-5127
PUBLISHER: Portland Press Ltd.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 9 OF 18 HCPLUS COPYRIGHT 2008 ACS on STN
TI Collagen polymorphisms of the intervertebral disc
AB A review. The mech. function and the collagen phenotype of the disk are complex, each a hybrid of elements of ligament and cartilage. In detail, the collagen properties are unique. Collagens I and II provide the bulk of the tissue fabric interwoven in opposing radial concentration gradients.

From anal. of isolated crosslinked peptides, some degree of commingling of these major fibrillar collagens occurs down to the mol. level. Collagens V, VI, IX, XI, XII, and XIV all contribute to the matrix. Collagen IX is the short mol. form that lacks a non-collagenous (NC)4 domain, not the long form found in most hyaline cartilages. Protein sequence and reverse transcriptase-PCR anal. confirmed this was the result of expression from the alternative transcription start site, not proteolysis of the long form. In view of recent reports that common single nucleotide polymorphisms in COL9A2 and COL9A3 are linked to chronic sciatica associated with disk pathol., the specific interactions and role of collagen IX in disk tissue are important to define.

ACCESSION NUMBER: 2002:899095 HCPLUS <>LOGINID::20080425>>
DOCUMENT NUMBER: 138:365883
TITLE: Collagen polymorphisms of the intervertebral disc
AUTHOR(S): Eyre, D. R.; Matsui, Y.; Wu, J.-J.
CORPORATE SOURCE: University of Washington, Orthopaedic Research Laboratories, Seattle, WA, 98195-6500, USA
SOURCE: Biochemical Society Transactions (2002), 30(6), 844-848
CODEN: BCSTB5; ISSN: 0300-5127
PUBLISHER: Portland Press Ltd.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 10 OF 18 HCPLUS COPYRIGHT 2008 ACS on STN
TI Effect of AGEs on human disc herniation: intervertebral disc hernia is also effected by AGEs
AB Currently, extracellular matrix MMP has been discussed in relation to the extrusion and spontaneous regression of the herniated mass observed in lumbar disk herniation. However, the question remains as to whether degenerated

protein is really the cause of this condition's pathogenesis. We confirmed immunol. by means of electron microscopy that extrusion is caused by the AGEs (advanced glycation end products)-induced crosslinking of collagen, and that spontaneous regression is due to AGE receptors on macrophages. Further, AGEs were found to be already exposed during histogenesis, suggesting a relation to apoptosis. In lumbar disk herniation and aging, glucose-derived AGEs cross-link proteins and cause vascular tissue damage.

ACCESSION NUMBER: 2002:825314 HCPLUS <<LOGINID::20080425>>
DOCUMENT NUMBER: 138:105071
TITLE: Effect of AGEs on human disc herniation:
intervertebral disc hernia is also
effected by AGEs
AUTHOR(S): Tsuru, Michiyo; Nagata, Kensei; Jimi, Atsuo; Irie,
Kouji; Yamada, Akira; Nagai, Ryoji; Horiuchi, Seikoh;
Sata, Michio
CORPORATE SOURCE: Department of Orthopaedic Surgery, Kurume University
School of Medicine, Kurume, 830-0011, Japan
SOURCE: Kurume Medical Journal (2002), 49(1-2), 7-13
PUBLISHER: Kurume University, School of Medicine
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 11 OF 18 HCPLUS COPYRIGHT 2008 ACS on STN
TI Method for restoring a damaged or degenerated intervertebral disk
AB The present invention relates to a minimally-invasive method for restoring a damaged or degenerated intervertebral disk at an early stage. The method comprises the step of administering an injectable in situ setting formulation in the nucleus pulposus of the damaged or degenerated disk of a patient. The formulation once injected combines with nucleus matters and host cells, and becomes viscous or gels in situ within the annulus fibrosus of the disk for increasing the thickness and volume of the damaged or degenerated disk. The formulation is retained within the disk for providing restoration of the damaged or degenerated disk. An acidic solution made of a water/acetic acid was prepared for all expts. The pH of this acidic solution was adjusted to 4.0. High mol. weight chitosan powder was added and dissolved in a volume of the acidic solution so as to produce chitosan solns. having chitosan proportions ranging from 0.5 to 2.0%. Glycerophosphate was added to the chitosan solns. and induced a pH increase. Chitosan and β -glycerophosphate components individually influenced the pH increase within the aqueous solns., and consequently influenced the sol to gel transition.

ACCESSION NUMBER: 2002:391576 HCPLUS <<LOGINID::20080425>>
DOCUMENT NUMBER: 136:406913
TITLE: Method for restoring a damaged or degenerated
intervertebral disk
INVENTOR(S): Desrosiers, Eric Andre; Chenite, Abdellatif; Berrada,
Mohammed; Chaput, Cyril
PATENT ASSIGNEE(S): Bio Syntech Canada Inc., Can.
SOURCE: PCT Int. Appl., 46 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	-----	-----	-----	-----

WO 2002040070	A2	20020523	WO 2001-CA1623	20011115 <--
WO 2002040070	A3	20021003		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2429168	A1	20020523	CA 2001-2429168	20011115 <--
AU 2002021370	A	20020527	AU 2002-21370	20011115 <--
EP 1335687	B1	20070110	EP 2001-996398	20011115 <--
R: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE, TR				
US 20040091540	A1	20040513	US 2003-416947	20031215 <--
PRIORITY APPLN. INFO.:			US 2000-248226P	P 20001115 <--
			US 2000-248568P	P 20001116 <--
			WO 2001-CA1623	W 20011115 <--

L6 ANSWER 12 OF 18 HCPLUS COPYRIGHT 2008 ACS on STN
 TI Characterization of poly(vinyl alcohol) hydrogel for prosthetic intervertebral disc nucleus
 AB In the recent years, development of intervertebral disk prosthesis has been of great concern to the world of medicine and science. Substitution of the spinal disk or its part being displaced or damaged due to trauma or a disease process for the artificial structure well imitating high tensile properties and elasticity of the real disk would highly improve the existing treatment techniques. In this work, the attempt to develop the PVA-based hydrogel material for artificial spinal disk has been made. The polymer was initially processed with the use of formaldehyde solution as a crosslinking agent and sulfuric acid as a catalyst. Then properties of the material have been altered by saturating the already existing PVA hydrogel with a mixture of hydrophilic and hydrophobic monomers (2-hydroxyethyl methacrylate and Me methacrylate) and a subsequent exposure to ionizing radiation (60Co source). In this way, interpenetrating polymer network has been built on the crosslinked PVA scaffold. Resulting structures were tested for their mech. behavior at different loads. Series of measurements leading to the determination of the physicochemical properties of created gels including crosslink d. and swelling abilities were also performed.
 ACCESSION NUMBER: 2002:184105 HCPLUS <>LOGINID::20080425>>
 DOCUMENT NUMBER: 137:299799
 TITLE: Characterization of poly(vinyl alcohol) hydrogel for prosthetic intervertebral disc nucleus
 AUTHOR(S): Darwis, Darmawan; Stasica, Przemyslaw; Razzak, Mirzan T.; Rosiak, Janusz M.
 CORPORATE SOURCE: Center for Research and Development of Isotope and Radiation Technology, National Nuclear Energy Agency, Jakarta Selatan, Indonesia
 SOURCE: Radiation Physics and Chemistry (2002), 63(3-6), 539-542
 CODEN: RPCHDM; ISSN: 0969-806X
 PUBLISHER: Elsevier Science Ltd.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 13 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Fluid matrix comprising crosslinked remodelable collagen
compositions for treating intervertebral disc
degeneration

AB A fluid matrix comprising crosslinked remodelable collagen from
a donor vertebrate animal is useful for regenerating hydrodynamic function
in damaged intervertebral disks in vivo. The matrix may be injectable and
may comprise cells and a plurality of purified cell growth factors. The
matrix promotes cell growth and elaboration of proteoglycans to facilitate
regeneration of native tissues. The collagen in the matrix may be
crosslinked using photooxidative catalysis and visible light, and
purified cell growth factors are preferably at least partly bone-derived.

ACCESSION NUMBER: 2001:762872 HCAPLUS <>LOGINID::20080425>>

DOCUMENT NUMBER: 135:308847

TITLE: Fluid matrix comprising crosslinked
remodelable collagen compositions for treating
intervertebral disc degeneration

INVENTOR(S): Moehlenbruck, Jeffrey William; Ranieri, John Paul

PATENT ASSIGNEE(S): Sulzer Biologics Inc., USA

SOURCE: PCT Int. Appl., 89 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001076654	A1	20011018	WO 2001-US11576	20010409 <--
W: CA, JP				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
US 6723335	B1	20040420	US 2000-545441	20000407 <--
CA 2400826	A1	20011018	CA 2001-2400826	20010409 <--
EP 1272236	A1	20030108	EP 2001-924870	20010409 <--
EP 1272236	B1	20060614		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
JP 2003530364	T	20031014	JP 2001-574169	20010409 <--
EP 1707225	A2	20061004	EP 2006-12022	20010409 <--
R: DE, ES, FR, GB, IT				
ES 2263612	T3	20061216	ES 2001-924870	20010409 <--
US 20050002909	A1	20050106	US 2004-812268	20040329 <--
PRIORITY APPLN. INFO.:				
			US 2000-545441	A 20000407 <--
			EP 2001-924870	A3 20010409 <--
			WO 2001-US11576	W 20010409 <--
REFERENCE COUNT:	7	THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT		

L6 ANSWER 14 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN

TI COL9A2 Allelotypes in Intervertebral Disc Disease

AB An allelic variation of the COL9A2 gene encoding the $\alpha 2$ -chain of
collagen IX has recently been identified as a genetic risk factor for
intervertebral disk prolapse, resulting in a tryptophan (Trp) substitution
at position 326 of the protein. To enable quick screening of a large
population we established a single enzyme (BsmI) restriction assay which
was validated by screening disk tissue samples of 250 patients (age,
 47.1 ± 13.7 yr). Pos. results were confirmed by nucleotide sequencing.
The Trp allele was found in three patients (1.2%) who suffered from their
first prolapse and were significantly older (70.7 ± 8.5 yr) than the
other 247 patients. Since the substitution affects a domain covalently

linked to collagen II fibrils, we conclude that this allelotype may contribute to reduced collagen crosslinking, disk instability and eventually prolapse in the elderly. (c) 2000 Academic Press.

ACCESSION NUMBER: 2000:884465 HCPLUS <<LOGINID::20080425>>
DOCUMENT NUMBER: 134:220937
TITLE: COL9A2 Allelotypes in Intervertebral Disc Disease
AUTHOR(S): Wrocklage, Christian; Wassmann, Hansdetlef; Paulus, Werner
CORPORATE SOURCE: Institute of Neuropathology, Westfälische Wilhelms-Universität Münster, Münster, Germany
SOURCE: Biochemical and Biophysical Research Communications (2000), 279(2), 398-400
CODEN: BBRCA9; ISSN: 0006-291X
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 15 OF 18 HCPLUS COPYRIGHT 2008 ACS on STN
TI Collagens in the injured porcine intervertebral disk
AB Spinal pain often is thought to be due to degeneration and mech. failure of the intervertebral disk. Since the mech. strength of the tissue depends on collagen fibers, the present study was designed to investigate the reactions in collagen metabolism after an exptl. induced disk injury. Five domestic pigs underwent an incision in the anterior part of the annulus fibrosus of disk L4-L5 through a retroperitoneal approach. The animals were killed 3 mo postoperatively, and the injured disks and intact disks (controls) from different animals were removed for chemical anal. Slices were cut from seven different parts across the disk. The concentration of total collagen (hydroxyproline [Hyp]), the activities of the two

key enzymes in collagen biosynthesis (prolyl 4-hydroxylase [PH] and galactosylhydroxylysyl glucosyltransferase [GGT]), and the concentration of mature collagen crosslinks (hydroxypyridinium [HP]) were determined. In all exptl. disks, the morphol. had changed considerably: the nucleus pulposus was small, fibrous, and yellowish. The annular lamellar structure was partially destroyed and had been replaced by granulation tissue in the region of the injury. Large osteophytes had formed at the ventral edges of the vertebral bodies. In the nucleus pulposus, the Hyp concentration and the activities of PH and GGT were significantly increased, whereas the water content had decreased. The concentration of HP crosslinks was decreased in the anterior annulus fibrosus.

ACCESSION NUMBER: 1994:320683 HCPLUS <<LOGINID::20080425>>
DOCUMENT NUMBER: 120:320683
TITLE: Collagens in the injured porcine intervertebral disk
AUTHOR(S): Kaapa, E.; Holm, S.; Han, X.; Takala, T.; Kovanen, V.; Vanharanta, H.
CORPORATE SOURCE: Dep. Med. Chem., Univ. Helsinki, Helsinki, 00210, Finland
SOURCE: Journal of Orthopaedic Research (1994), 12(1), 93-102
DOCUMENT TYPE: CODEN: JOREDR; ISSN: 0736-0266
LANGUAGE: Journal English

L6 ANSWER 16 OF 18 HCPLUS COPYRIGHT 2008 ACS on STN
TI Type VI collagen of the intervertebral disc.
Biochemical and electron-microscopic characterization of the native

protein
AB The collagen framework of the intervertebral disk contains 2 major fibril-forming collagens, types I and II. Smaller amts. of other types of collagen are also present. On examination of the nature and distribution of these minor collagens within bovine disk tissue, type VI collagen was found to be unusually abundant. It accounted for .apprx.20% of the total collagen in calf nucleus pulposus, and .apprx.50% in the annulus fibrosus. By serially digesting disk tissue with chondroitin ABC lyase and Streptomyces hyaluronidase, native covalent polymers of type VI collagen could be extracted. Electron micrographs of this material prepared by rotary shadowing revealed the characteristic dimensions of tetramers and double tetramers of type VI mols., with their central rods and terminal globular domains. Mol.-sieve column chromatog. on agarose under nonreducing, nondenaturing conditions gave a series of protein peaks with mol. sizes equivalent to the tetramer, double tetramer, and higher multimers. On SDS-PAGE after SS bond cleavage, these fractions of type VI collagen all showed a main band at mol. weight (Mr) 140,000 and 4 lesser bands of Mr 180,000-240,000. On electrophoresis without SS bond cleavage in agarose-2.4% polyacrylamide only dimeric (6 chains) and tetrameric (12 chains) forms of type VI mols. were present. The ability to extract all the type VI collagen of the tissue in 4M guanidinium chloride, and the absence of aldehyde-mediated crosslinking residues on direct anal., showed that, in contrast with most matrix collagens, type VI collagen does not function as a covalently crosslinked structural polymer.

ACCESSION NUMBER: 1987:1631753 HCAPLUS <>LOGINID::20080425>>

DOCUMENT NUMBER: 107:231753

ORIGINAL REFERENCE NO.: 107:37150h,37151a

TITLE: Type VI collagen of the intervertebral disc. Biochemical and electron-microscopic characterization of the native protein

AUTHOR(S): Wu, Jiann Jiu; Eyre, David R.; Slayter, Henry S.

CORPORATE SOURCE: Sch. Med. Med., Univ. Washington, Seattle, WA, 98195, USA

SOURCE: Biochemical Journal (1987), 248(2), 373-81

CODEN: BIJOAK; ISSN: 0306-3275

DOCUMENT TYPE: Journal

LANGUAGE: English

L6 ANSWER 17 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN

TI Quantitation of hydroxypyridinium crosslinks in collagen by high-performance liquid chromatography

AB An HPLC method for quantifying the 3-hydroxypyridinium crosslinks of collagen is described which can be applied to crude hydrolysates of all types of connective tissue. Mineralized tissues were hydrolyzed directly and analyzed without interference from the mineral ions. The hydroxylysyl (HP) and lysyl (LP) forms of hydroxypyridinium residue were resolved on a reversed-phase C-18 column with a gradient of CH3CN in H2O and 0.01M n-heptafluorobutyric acid as an ion-pairing agent. The crosslinking amino acids were accurately quantified down to 2 pM (1 ng) injected, by detecting their natural fluorescence with a fluorometer. Tissues in which hydroxypyridinium crosslinks were plentiful included all forms of cartilage, bone, dentin, ligament, tendon, fascia, intervertebral disk, lung, gut, cervix, aorta, and vitreous humor. Among normal tissues, LP, the minor form of the crosslink, was present in significant amts. relative to HP only in bone and dentin. Both crosslinks were essentially absent from skin, cornea, rat tail tendon, and basement membranes.

ACCESSION NUMBER: 1984:188196 HCAPLUS <>LOGINID::20080425>>

DOCUMENT NUMBER: 100:188196

ORIGINAL REFERENCE NO.: 100:28559a,28562a

TITLE: Quantitation of hydroxypyridinium crosslinks

AUTHOR(S): in collagen by high-performance liquid chromatography
Eyre, David R.; Koob, Thomas J.; Van Ness, Kirk P.
CORPORATE SOURCE: Child. Hosp., Boston, MA, 02115, USA
SOURCE: Analytical Biochemistry (1984), 137(2),
380-8
CODEN: ANBCA2; ISSN: 0003-2697
DOCUMENT TYPE: Journal
LANGUAGE: English

L6 ANSWER 18 OF 18 HCPLUS COPYRIGHT 2008 ACS on STN
TI Changes in the collagen of human intervertebral discs during aging and degenerative disc disease
AB The collagen of human intervertebral disk has been shown to possess ≥1 type of collagen. The fibro-cartilage of the annulus fibrosus was comprised mainly of the cartilage (type II) collagen, but contained some skin-tendon (type I) collagen, whereas the collagen in the nucleus pulposus was entirely type II. The crosslinks responsible for maintaining the integrity of the collagen fibers were typical of cartilage collagen, and the proportion of these reducible crosslinks decreased with age until at maturity they were barely detectable. Anal. of the disks from subjects with degenerate disk disease revealed the presence of a high proportion of reducible crosslinks, indicating the synthesis of new collagen. This was particularly evident in the disk above the degenerate disk. From the nature of the crosslinks and the type of collagen synthesized in tissue culture, it appeared that type I collagen was synthesized in the annulus and nucleus.

ACCESSION NUMBER: 1976:149000 HCPLUS <<LOGINID::20080425>>
DOCUMENT NUMBER: 84:149000
ORIGINAL REFERENCE NO.: 84:24221a,24224a
TITLE: Changes in the collagen of human intervertebral discs during aging and degenerative disc disease
AUTHOR(S): Herbert, C. M.; Lindberg, K. A.; Jayson, M. I. V.; Bailey, A. J.
CORPORATE SOURCE: Dep. Biochem., Meat Res. Inst., Langford/Bristol, UK
SOURCE: Journal of Molecular Medicine (Shannon, Ireland) (1975), 1(1), 79-91
DOCUMENT TYPE: Journal
LANGUAGE: English